FRAMING FOR A WINDOW OF A MOTOR VEHICLE PASSENGER COMPARTMENT, AND A MOTOR VEHICLE DOOR INCLUDING SUCH FRAMING

The present invention relates to framing for a window of the passenger compartment of a motor vehicle, and to a motor vehicle door including such framing.

It is known to make the rear lights of motor vehicles, and in particular the stop lights, by integrating them in air deflectors, also known as spoilers, which are placed to extend the roof or the trunk.

These deflectors then simultaneously constitute housings for the lights, which means there is no need to provide separate housings for the lights.

One of the difficulties that arises with such pieces that perform both the function of a deflector and the function of a housing for lights, is that they must be watertight, which considerably increases cost.

Thus, the saving achieved by integrating the lights in the deflector is lost in part by the increase in cost for a deflector that is sealed.

The present invention seeks to propose a solution for integrating lights in a motor vehicle in a manner that does not require any increase in cost for the member that receives the lights.

The present invention provides framing for a window of a motor vehicle passenger compartment, the framing including a support face between an inside edge and an outside edge of the framing for being covered by the periphery of a window that is connected in sealed manner to said outside edge.

According to the invention, the framing is characterized in that it includes an arrangement on its window-supporting face for receiving a light source.

The invention of the present application takes advantage from the existence of the window of the passenger compartment and of its framing to form a light

unit whose housing is constituted by the framing and whose glazing is constituted by the window.

Compared with prior techniques consisting in using an air deflector, the invention presents the advantage that the housing constituted by the framing is, by its very nature, a housing that is sealed from the outside of the vehicle.

In a particular embodiment, the framing is provided with a reinforced structure for stiffening it.

The passenger compartment window framing of the invention can be carried by a vehicle door, in particular a rear door or tailgate, which presents the advantage of providing a visible surface area near the top of the vehicle, i.e. in the most appropriate location for receiving stop lights or direction indicators.

In a particular embodiment, the framing includes a housing that is open both towards the outside of the vehicle, i.e. towards the window side, and towards the inside of the vehicle, this housing being arranged to receive the light source in such a manner as to enable it to emit light out from the housing both towards the outside and towards the inside of the vehicle.

In a preferred variant, the housing is closed, towards the inside of the vehicle, by a wall that is translucent or transparent, and possibly provided with a filter, so as to diffuse the light emitted by the light source towards the inside of the vehicle.

This wall allows light to pass from the light source housed in the framing so that the light source can emit light towards the outside of the vehicle through the passenger compartment window, and towards the inside of the vehicle through said wall.

In a particular embodiment, the housing contains a moving reflector capable of taking up a first position in which it sends light rays emitted by the light source towards the outside of the vehicle through the window, and

a second position in which it sends the light rays towards the inside of the passenger compartment.

Framing provided with such a moving reflector can be used, for example, on a tailgate so as to act both as a rear light unit when the tailgate is in the closed position, and to illuminate the trunk of the vehicle when the tailgate is in the open position, with the moving reflector being moved between its two positions by opening and closing the tailgate.

The invention also provides a motor vehicle door, in particular a tailgate, characterized in that it includes framing as described above.

In order to make the invention easier to understand, embodiments are described below with reference to the accompanying drawings, in which:

- Figure 1 is a perspective view of a tailgate of a motor vehicle;
- Figure 2 is a close-up view of one of the uprights of the Figure 1 vehicle tailgate;
- Figure 3 is a close-up view of a tailgate upright in a different embodiment of the invention;
- Figure 4 is a fragmentary section view on IV-IV through the upright of Figure 3;
- Figure 5 is a view looking along V at the Figure 3 upright;
- Figure 6 is a fragmentary section view analogous to Figure 4 showing a tailgate upright in another embodiment; and
- Figure 7 is a view analogous to Figure 6 showing the upright in another position.

The tailgate 1 of a vehicle as shown in Figure 1 comprises a top portion 2 extending the vehicle roof (not shown), a vertical glazed portion 3, a substantially horizontal intermediate portion 4 covering the rear trunk of the vehicle, and a substantially vertical end portion 5 starting the body shell waistline at the back of the vehicle.

The glazed portion 3 is constituted by a window 6 having a black margin 7 made by silkscreen printing to hide the framing structure of the tailgate.

This structure is constituted by uprights 8, one of which is visible in Figure 2.

In the embodiment of Figure 2, each upright 8 is constituted by a structural part forming a box fitted with an internal array of ribs 9. The box has an inside edge 8a and an outside edge 8b.

The box extends longitudinally and is of U shaped cross section.It has two side plates 10 whereby it is stuck to the window, thus serving simultaneously to hold the window and to seal the box relative to the outside of the vehicle, with this being performed in particular by the side plate 10 adjacent to the outside edge 8b. These two soleplates coincide with the support face of the box that receives the window 6.

A longitudinal support plate 11 made of plastics material supports light-emitting diodes (LEDs) 12. The plate 11 is designed to be received in the box so as to position the LEDs therein.

For this purpose, the plate has fasteners in the form of pins 13 suitable for insertion into orifices 14 provided for this purpose in the box on its side facing towards the window.

The internal array of ribs has cutouts 15 for receiving the support plate 11.

The silkscreen printing 7 around the window defines a transparent strip on either side of the window in register with the LEDs carried by the support plate.

Given the long lifetime that LEDs are assumed to have, no means are provided in this embodiment for replacing them, since the lifetime of the tailgate (and thus of the vehicle) is assumed to be shorter than that of the LEDs.

In the embodiment of Figures 3, 4, and 5, the upright 8' of the tailgate presents a ribbed structure

outside the zones for receiving the light sources 12 that is identical to the structure in the upright described above, having an inside edge 8'a and an outside edge 8'b.

In contrast, in the portions that are designed to receive the light sources, the upright has a housing 17 that is accessible from inside the vehicle. This housing is substantially in the form of a rectangular parallelepiped, having a far wall 18 provided with openings 19 positioned to coincide with the LEDs 12 carried by a support plate 20 in the form of a cover suitable for closing the housing.

The support plate 20 has resilient lugs or clips 21 for snap-fastening it in the housing. These lugs carry electrically conductive tracks 22 serving as electrical connectors for feeding electricity to the LEDs by coupling with a conductive base member 23 provided in the housing.

As can be seen in Figure 4, the array of ribs in the upright is interrupted at the location of the housing for receiving the LEDs.

The advantage of this embodiment lies in the possibility of removing the LEDs easily, which can be useful in spite of the assumed long lifetime of LEDs, e.g. for the purpose of changing the power of these light sources or their colors.

As can be seen in Figure 5, when the cover is properly positioned in the housing, the LEDs are flush with the face of the upright that is directed towards the window and thus in the immediate proximity of the window.

The face 23 of the upright surrounding the diodes can then be seen through the window and its appearance can be improved, e.g. by overmolding a decorative film while making the upright.

In the embodiment of Figures 6 and 7, the upright 25 is of a cross-section similar to that of the upright shown in Figures 3 to 5.

However, in this embodiment, the LEDs 26 are mounted on one of the side walls 27 of the housing 28 that is designed to receive the light sources.

The housing is closed by inside glazing 31 constituting a wall that is transparent or translucent. This inside glazing can include a filter for white light so as to diffuse white light towards the inside of the passenger compartment, even if the LEDs emit red light.

By means of the inside glazing 31 and also of openings 30 provided in the far wall of the housing, the light emitted by the LEDs 26 can leave the housing both towards the inside and towards the outside of the vehicle.

A pivoting reflector 32 is placed facing the diodes inside the housing. This reflector can take up a first position as shown in Figure 6 where it directs the light rays from the LEDs 26 towards the outside through the openings 30 formed in the far wall 29 of the housing, as represented by the arrow in this figure.

The pivoting reflector 32 can also take up a second position as shown in Figure 7, in which it sends the light rays emitted by the LEDs 26 towards the inside glazing 31, i.e. towards the inside of the passenger compartment, as represented by the arrow in this figure.

The pivoting reflector 32 can be switched between its two positions by any suitable means, for example by an electrical actuator (not shown).

Another way of moving the reflector 32 is to make use of its own weight. For this purpose, it suffices to fix the reflector on a pivot axis that is offset relative to its center of gravity. Thus, the reflector can take up the position shown in Figure 6 when the tailgate is closed in which case the LEDs act as rear lights, and the position shown in Figure 7 when the tailgate is open, in which case the LEDs serve to illuminate the trunk. The person skilled in the art can readily achieve such a configuration.

The embodiments described above are not limiting in any way, and the invention is defined by the accompanying claims.

In particular, light sources other than LEDs could be used, as could other structures for the uprights, providing the framing includes arrangements for receiving a light source.